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ABSTRACT OF THE DISCLOSURE

5       A reduced rank adaptive digital filtering method is described for  
a received signal consisting of a sequence of  $N \times 1$  received vectors.  
Each received vector is formed from a group of  $N$  successive samples.  
 $D + 1$  basis vectors are generated where  $D$  is less than  $N$  and the  
dimension of a desired reduced rank subspace. Each successive basis  
10       vector is generated by multiplying an immediate preceding basis vector  
by the covariance matrix for the sequence of received sample vectors  
and the first basis vector is formed from a given or estimated steering  
vector.  $D$  filter coefficients are generated from correlations between  
pairs of basis vectors. The adaptive digital filter of the present invention  
15       achieves near optimal rank performance with substantially fewer  
training symbols than heretofore possible.